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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,669	03/05/2002	Troy S. Prince	ORBITAL-009	7746

7590 04/18/2003

Brian M. Kolkowski, Esq.
The Kolkowski Law Office
6340 Taylor Road
Leroy, OH 44077

EXAMINER

FERNSTROM, KURT

ART UNIT	PAPER NUMBER
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3712

DATE MAILED: 04/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

N.K.

Office Action Summary		Application No. 10/091,669	Applicant(s) PRINCE ET AL.
		Examiner Kurt Fernstrom	Art Unit 3712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.

6) ☐ Other: _____

Art Unit: 3712

DETAILED ACTION

Claim Objections

1. Claims 4, 10 and 15 are objected to because of the following informalities: "have" should be "has". Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3, 4, 9, 10, 14 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The use of the term "about" renders the claims indefinite because no standard is set forth for determining what dimensions would fall within the claimed ranges. See MPEP 2173.05(b).

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.

Art Unit: 3712

Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1, 2, 5, 7, 8, 12 and 13 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,354,839 ("Schmidt") in view of Nutzel. Schmidt discloses all of the limitations of claims 1, 2, 5, 7, 8, 12 and 13 with the exception of the elastomeric polymer. Nutzel discloses in column 3, line 8 to column 4, line 68 of the specification a display system comprising a plurality of valves 2 having a top surface and a bottom surface, wherein each valve is positioned in line with an opening which represents a Braille dot, such that the valves are extended or retracted to form a Braille display. Nutzel further discloses in column 4, lines 19-27 that an elastomeric polymer membrane 9 is sealed about each opening such that the membrane forms the Braille dots upon actuation of the valves. It would have been obvious to one of ordinary skill in the relevant art to modify the device disclosed by Schmidt by providing an elastomeric polymer covering the display

Art Unit: 3712

for the purpose of protecting the valves from environmental conditions. With respect to claims 7 and 12, piezoelectric and shape memory alloys are both well known means of actuating refreshable Braille display devices, as discussed at page 2 of the specification.

6. Claims 3, 4, 9, 10, 14 and 15 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Schmidt in view of Nutzel, and further in view of Wright. Schmidt as viewed in combination with Nutzel discloses all of the limitations of the claims with the exception of the properties of the elastomeric polymer. Wright discloses in column 4, lines 1-22 that elastomeric polymers commonly have a modulus of elasticity and a thickness in the range specified in the claims. It would have been obvious to one of ordinary skill in the relevant art to modify the device disclosed by Schmidt as viewed in combination with Nutzel by providing an elastomeric polymer having a modulus of elasticity of less than 500,000 psi and a thickness in the range of 0.001 to 1.25 mm for the purpose of providing a coating which has sufficient strength and flexibility to withstand repeated actuation of the valves, particularly in light of the fact that Wright discusses strength, pliability and elasticity as the benefits of the selected elastomers.

7. Claims 6, 11 and 16 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Schmidt in view of Nutzel, and further in view of Schmidt as viewed in combination with Crotzer. Nutzel discloses all of the limitations of the claims with the exception of the use of thermoplastic polyolefin. Crotzer discloses in column 3, lines 48-54 that thermoplastic polyolefin may be used in an elastomeric polymer layer. It would

Art Unit: 3712

have been obvious to one of ordinary skill in the relevant art to modify the device disclosed by Schmidt as viewed in combination with Nutzel by providing thermoplastic polyolefin for the purpose of providing a coating which has resistance to oil and chemicals which might damage the valves.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fricke, Eltgen, Sutherland, Tieman, Burchart, Breider, Kipke, Raynes, Hudecek, Garner, Gilkes, Decker, Huyt and Vong disclose various Braille display devices.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kurt Fernstrom whose telephone number is (703) 305-0303.

KF

April 15, 2003


Kurt Fernstrom